

IN THE CLAIMS:

Please amend Claims 12 and 13, as follows:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Previously Presented) A diffractive optical element according to Claim 13, wherein the diffractive surface and the alignment mark are adapted to transmit light rays of the first and second wavelengths.

5. (Previously Presented) A diffractive optical element according to Claim 13, wherein the diffractive surface and the alignment mark are adapted to reflect light rays of the first and second wavelengths.

6. (Previously Amended) A diffractive optical element according to Claim 13, wherein the diffractive surface comprises binary optics, and wherein the diffractive surface and the alignment mark are formed in accordance with a lithographic process.

7. (Previously Presented) A diffractive optical element according to Claim 13, further comprising a substrate on which the diffractive surface and the alignment mark are formed, and wherein said predetermined member is a metal ring for holding the substrate.

8. (Previously Presented) A diffractive optical element according to Claim 13, wherein said predetermined member is a metal ring, wherein the alignment mark is placed at a center of the diffractive surface, and wherein the alignment mark is disposed at a central position of an outside circumference of the metal ring.

9. (Previously Amended) A diffractive optical element according to Claim 8, wherein the alignment mark and the central position of the metal ring are aligned with each other, on the basis of detection of the alignment mark by use of the light of the second wavelength.

10. (Previously Amended) A projection optical system including a diffractive optical element as recited in Claim 13.

11. (Original) A projection exposure apparatus for projecting a pattern onto a substrate by use of a projection optical system as recited in Claim 10.

12. (Currently Amended) A device manufacturing method, comprising the steps of:

exposing a substrate with a device pattern, projected from an exposure apparatus having a diffractive optical element having a design wavelength λ , the diffractive optical element including (i) a diffractive surface for diffracting predetermined light corresponding to the design wavelength λ , and (ii) an alignment mark having a shape such that, with regard to the predetermined light, a phase difference corresponding to a multiple, by an integer, of the design wavelength λ is produced between (i) a light ray, of the predetermined light, as transmitted through or reflected by the alignment mark and (ii) a light ray, of the predetermined light, as transmitted through or reflected by a portion adjacent to the alignment mark, and that, with regard to second light of a second wavelength λ' different from the design wavelength λ , no phase difference corresponding to a multiple, by an integer, of the second wavelength λ' is produced between (a) a light ray, of the second light, as transmitted through or reflected by the alignment mark and (b) a light ray, of the second light, as transmitted through or reflected by a portion adjacent to the alignment mark, whereby a position of the alignment mark is detected using the light of the second wavelength, ~~and alignment of the diffractive surface with the substrate is performed on the basis of the detected position; and~~

developing the exposed substrate.

13. (Currently Amended) A diffractive optical element having a design wavelength λ , comprising:

a diffractive surface for diffracting predetermined light wavelength λ ; and
an alignment mark having a shape such that, with regard to the
predetermined light, a phase difference corresponding to a multiple, by an integer, of the
design wavelength λ is produced between (i) a light ray, of the predetermined light, as
transmitted through or reflected by the alignment mark and (ii) a light ray, of the
predetermined light, as transmitted through or reflected by a portion adjacent to the
alignment mark, and that, with regard to second light of a second wavelength λ' different
from the design wavelength λ , no phase difference corresponding to a multiple, by an
integer, of the second wavelength λ' is produced between (a) a light ray, of the second
light, as transmitted through or reflected by the alignment mark and (b) a light ray, of the
second light, as transmitted through or reflected by a portion adjacent to the alignment
mark, whereby a position of the alignment mark is detected using the light of the second
wavelength, and alignment of the diffractive surface with a predetermined member is
performed on the basis of the detected position.

14. (Canceled)

15. (Previously Presented) A diffractive optical element according to
Claim 13, wherein the alignment mark is disposed substantially at the center of the
diffractive surface.

16. (Previously Presented) A diffractive optical element according to Claim 13, wherein the alignment mark is defined by a recess formed on the diffractive surface.

17. (Previously Presented) A diffractive optical element according to Claim 13, wherein the alignment mark is defined by a protrusion formed on the diffractive surface.